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BARR

July 3, 2012

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
901 North 5th Street
Kansas City, KS 66101

Re: National Mine Tailings Site Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No.CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period May 1, 2012 through May 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0600.

Sincerely,

Ty L. Morris, P.E., R.G.
Vice President

TLM/jms
Enclosure
c: Mark Nations – TDRC
Matt Wohl – TDRC (electronic only)
Kevin Lombardozzi – NL Industries, Inc.
John Kennedy – City of Park Hills
Norm Lucas – Park Hills – Leadington Chamber of Commerce
Kathy Rangen – MDNR
Tim Skoglund – Barr Engineering

National Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: May 1, 2012 – May 31, 2012

1. **Actions Performed and Problems Encountered This Period:**

   a. Work at the site continued on the main chat pile. This work focused on placing rock on the top of the Chat Pile Area. This included placing a 6-inch layer of crushed rock filter on the graded surface and a 12-inch layer of slope riprap on top of the crushed rock filter. As of the end of the period, work on this task had been completed.

   b. Work at the site also continued on the task of modifying the southern slope of the stormwater detention basin in the West Area. This work focused on the task of installing the extension to the storm sewer outlet, finishing construction of the berm, and rocking the portions of the berm that had been verified to have been constructed to the final subgrade elevations. As of the end of the period, the southern slope had been rebuilt, the extension had been installed, and approximately 75% of the area had been covered with rock.

   c. Work at the site also continued on the task of constructing the portion of the Piramal Glass property located west of the Lee Mechanical office building. This task focused on placing rock on the portion of the Piramal Glass property that had been regraded. This included placing a 6-inch layer of crushed rock filter on the graded surface and a 12-inch layer of slope riprap on top of the crushed rock filter. As of the end of the period, work on this task had been completed.

   d. Work at the site also began on the task of constructing the channel through the Thin Tailings Area to carry the glass factory discharge water from the discharge of the new 24-inch CPEP, which was installed in the disposal area buttressing slope, to Flat River. This work focused on excavating the channel through this area. As of the end of the period, work on this task had been completed.

      Upon completion of the grading activities on the channel through the Thin Tailings Area, work began on the task of rocking the channel. This work focused on placing a 6-inch layer of riprap bedding on the tailings and soil followed by a layer of Type 4 riprap over the riprap bedding on the side slopes and bottom of the channel. As of the end of the period, work on this task had been completed.

   e. Work at the site continued on the task of meeting with the landowners who may be affected by the removal action activities. This included meeting with landowners who signed an access agreement prior to April 1, 2008, which needed to be amended, as well as landowners who have not signed agreements. As of the end of the period, the following had been accomplished:

      <u>Landowners that own property within the site boundary</u>
      Total number of landowners = 22
      Landowners who signed an access agreement prior to 04/01/08 = 18
      Landowners who signed an access agreement after 04/01/08 = 1
      Landowners who are reviewing the access agreement = 3
      Landowners who have refused to sign the access agreement = 0
      Landowners who still need to be met with concerning the access agreement = 0

      Total number of landowners who need to sign the amendment letter = 18
      Landowners who have signed the amendment letter = 16
      Landowners who are reviewing the amendment letter = 1
      Landowners who refused to sign the amendment letter = 0
      Landowners who still need to be met with concerning the amendment letter = 1

      (Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

      <u>Landowners that own property immediately adjacent to the site boundary</u>
      Total number of landowners = 27
      Landowners who signed an access agreement prior to 04/01/08 = 11
      Landowners who signed an access agreement after 04/01/08 = 6
      Landowners who are reviewing the access agreement = 4
      Landowners who have refused to sign the access agreement = 3

Landowners who still need to be met with concerning the access agreement = 3

Total number of landowners who need to sign the amendment letter = 11
Landowners who have signed the amendment letter = 11
Landowners who are reviewing the amendment letter = 0
Landowners who refused to sign the amendment letter = 0
Landowners who still need to be met with concerning the amendment letter = 0

(It is not anticipated that it will be a challenge to work around the property owned by the three landowners that refused to sign the access agreement based on location of the property in relationship to the work that needs to be completed. Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

2. Analytical Data and Results Received This Period:

a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.

b. During this period, the Ambient Air Monitoring Report for February 2012 was received. Any issues identified in these reports are discussed below. A copy of this document has been sent to your attention.

The February 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- There was a QA blank filter associated with the Rivermines #3 (Water Treatment Plant) TSP monitors and PM_{10} on 02/29/12.

3. Developments Anticipated and Work Scheduled for Next Period:

a. Continue rocking the portion of the Thin Tailings Area between the haul road and the sewer line from Northing Coordinate N736750 to Northing Coordinate N739000.

b. Finish constructing the buttressing slope of the Industrial Park Area for the portion of the slope immediately east of the from the Doe Run shop.

c. Finish rocking the south slope of the stormwater detention pond in the West Area.

d. Continue constructing the eastern buttressing slope between Northing Coordinates N737900 and N738400.

e. Complete monthly water sampling activities as described in the Removal Action Work Plan.

f. Complete air monitoring activities as described in the Removal Action Work Plan.

g. Continue efforts to contact and meet with the landowners identified as potentially being affected by the removal action activities so that access agreements can be obtained.

4. Changes in Personnel:

a. None.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.

End of Monthly Progress Report

June 07, 2012

Allison Olds
Barr Engineering Company
1001 Diamond Ridge
Suite 1100
Jefferson City, MO 65109
TEL: (573) 638-5007
FAX: (573) 638-5001

RE: National MTS 25/86-0003 **WorkOrder:** 12060019

Dear Allison Olds:

TEKLAB, INC received 1 sample on 6/1/2012 11:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: Barr Engineering Company
Work Order: 12060019
Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12

This reporting package includes the following:

Client: Barr Engineering Company
Work Order: 12060019

Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12

Abbr Definition

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.

DNI Did not ignite

DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

B - Analyte detected in associated Method Blank

E - Value above quantitation range

H - Holding times exceeded

M - Manual Integration used to determine area response

ND - Not Detected at the Reporting Limit

R - RPD outside accepted recovery limits

S - Spike Recovery outside recovery limits

X - Value exceeds Maximum Contaminant Level

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

Cooler Receipt Temp: 0.6 °C

Locations and Accreditations

Collinsville		Springfield		Kansas City	
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	Address	3920 Pintail Dr Springfield, IL 62711-9415	Address	8421 Nieman Road Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	kmcclain@teklabinc.com	Email	dthompson@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2013	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2013	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2012	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2012	Springfield
Arkansas	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	IDPH	17584		4/30/2013	Collinsville
Kentucky	UST	0073		5/26/2014	Collinsville
Missouri	MDNR	00930		4/13/2013	Collinsville
Oklahoma	ODEQ	9978		8/31/2012	Collinsville

Client: Barr Engineering Company
Work Order: 12060019
Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12
Lab ID: 12060019-001
Client Sample ID: Nat-East
Matrix: AQUEOUS
Collection Date: 05/31/2012 14:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993 (TOTAL)								
Sulfate	NELAP	100		180	mg/L	10	06/05/2012 17:07	R164431
STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		7.94		1	06/01/2012 12:35	R164284
STANDARD METHODS 18TH ED. 2340 C								
Hardness, as (CaCO3)	NELAP	5		540	mg/L	1	06/01/2012 12:20	R164298
STANDARD METHODS 18TH ED. 2540 C (TOTAL)								
Total Dissolved Solids	NELAP	20		588	mg/L	1	06/04/2012 12:25	R164379
STANDARD METHODS 18TH ED. 2540 D								
Total Suspended Solids	NELAP	6		< 6	mg/L	1	06/01/2012 13:06	R164280
STANDARD METHODS 18TH ED. 2540 F								
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	06/01/2012 12:11	R164275
STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON								
Total Organic Carbon (TOC)	NELAP	1.0		< 1.0	mg/L	1	06/04/2012 21:30	R164375
EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	06/05/2012 8:31	78596
Zinc	NELAP	10.0		36.1	µg/L	1	06/05/2012 8:31	78596
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	06/05/2012 5:28	78615
Zinc	NELAP	10.0		46.0	µg/L	1	06/05/2012 5:28	78615
STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)								
Lead	NELAP	4.00	X	21.6	µg/L	2	06/01/2012 15:54	78595
STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA								
Lead	NELAP	2.00	X	33.4	µg/L	1	06/04/2012 11:13	78613

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
12060019-001	Nat-East	Aqueous	5	05/31/2012 14:25

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

Sample ID	Client Sample ID / Test Name	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
12060019-001A	Nat-East	05/31/2012 14:25	06/01/2012 11:00		
	Standard Methods 18th Ed. 2540 F				06/01/2012 12:11
12060019-001B	Nat-East	05/31/2012 14:25	06/01/2012 11:00		
	EPA 600 375.2 Rev 2.0 1993 (Total)				06/05/2012 17:07
	Standard Method 18th Ed. 4500-H B, Laboratory Analyzed				06/01/2012 12:35
	Standard Methods 18th Ed. 2340 C				06/01/2012 12:20
	Standard Methods 18th Ed. 2540 C (Total)				06/04/2012 12:25
	Standard Methods 18th Ed. 2540 D				06/01/2012 13:06
12060019-001C	Nat-East	05/31/2012 14:25	06/01/2012 11:00		
	EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			06/01/2012 17:28	06/05/2012 5:28
	Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA			06/01/2012 16:48	06/04/2012 11:13
12060019-001D	Nat-East	05/31/2012 14:25	06/01/2012 11:00		
	EPA 600 4.1.1, 200 7R4.4, Metals by ICP (Dissolved)			06/01/2012 12:45	06/05/2012 8:31
	Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved)			06/01/2012 12:11	06/01/2012 15:54
12060019-001E	Nat-East	05/31/2012 14:25	06/01/2012 11:00		
	Standard Methods 18th Ed. 5310 C, Organic Carbon				06/04/2012 21:30

Client: Barr Engineering Company
Work Order: 12060019
Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12

EPA 600 375.2 REV 2.0 1993 (TOTAL)

Batch R164431 **SampType:** MBLK Units mg/L
SampID: ICB/MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate	10		< 10						06/05/2012

Batch R164431 **SampType:** LCS Units mg/L
SampID: ICV/LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate	10		20	20	0	99.8	90	110	06/05/2012

Batch R164431 **SampType:** MS Units mg/L
SampID: 12060019-001BMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate	100		274	100	180.2	93.9	85	115	06/05/2012

Batch R164431 **SampType:** MSD Units mg/L RPD Limit 10
SampID: 12060019-001BMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate	100		272	100	180.2	92.1	274.1	0.66	06/05/2012

STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED

Batch R164284 **SampType:** LCS Units
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH	1.00		6.99	7.00	0	99.9	99.1	100.8	06/01/2012

Batch R164284 **SampType:** DUP Units RPD Limit 10
SampID: 12060019-001BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH	1.00		7.96				7.940	0.25	06/01/2012

STANDARD METHODS 18TH ED. 2340 C

Batch R164298 **SampType:** MBLK Units mg/L
SampID: MB-R164298

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hardness, as (CaCO3)	5		< 5						06/01/2012

Batch R164298 **SampType:** LCS Units mg/L
SampID: LCS-R164298

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hardness, as (CaCO3)	5		1020	1000	0	102.0	90	110	06/01/2012

Client: Barr Engineering Company
Work Order: 12060019
Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12

STANDARD METHODS 18TH ED. 2340 C

Batch R164298 **SampType:** MS Units mg/L
SampID: 12060019-001BMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Hardness, as (CaCO3)	5		940	400	540.0	100.0	85	115	06/01/2012

Batch R164298 **SampType:** MSD Units mg/L RPD Limit 10
SampID: 12060019-001BMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Hardness, as (CaCO3)	5		940	400	540.0	100.0	940.0	0.00	06/01/2012

STANDARD METHODS 18TH ED. 2540 C (TOTAL)

Batch R164379 **SampType:** MBLK Units mg/L
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		< 20						06/04/2012
Total Dissolved Solids	20		< 20						06/04/2012

Batch R164379 **SampType:** LCS Units mg/L
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		992	1000	0	99.2	90	110	06/04/2012

Batch R164379 **SampType:** LCSQC Units mg/L
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		974	1000	0	97.4	90	110	06/04/2012

Batch R164379 **SampType:** MS Units mg/L
SampID: 12060019-001B MS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		1130	500	588.0	108.4	85	115	06/04/2012

Batch R164379 **SampType:** MSD Units mg/L RPD Limit 15
SampID: 12060019-001B MSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids	20		1140	500	588.0	110.0	1130	0.71	06/04/2012

STANDARD METHODS 18TH ED. 2540 D

Batch R164280 **SampType:** MBLK Units mg/L
SampID: MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6.00		< 6.00						06/01/2012
Total Suspended Solids	6		< 6						06/01/2012

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

STANDARD METHODS 18TH ED. 2540 D

Batch R164280 **SampType:** LCS Units mg/L
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Suspended Solids	6		102	100	0	102.0	85	115	06/01/2012
Total Suspended Solids	6		96	100	0	96.0	85	115	06/01/2012
Total Suspended Solids	6		91	100	0	91.0	85	115	06/01/2012
Total Suspended Solids	6		104	100	0	104.0	85	115	06/01/2012

Batch R164280 **SampType:** DUP Units mg/L RPD Limit 15
SampID: 12060019-001B DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Suspended Solids	6		< 6				5.000	0.00	06/01/2012

STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON

Batch R164375 **SampType:** MBLK Units mg/L
SampID: ICB/MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Organic Carbon (TOC)	1.0		< 1.0						06/04/2012

Batch R164375 **SampType:** LCS Units mg/L
SampID: ICV/LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Organic Carbon (TOC)	5.0		47.2	48.2	0	98.0	89.6	109.5	06/04/2012

Batch R164375 **SampType:** MS Units mg/L
SampID: 12060019-001EMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Organic Carbon (TOC)	1.0		5.9	5.0	0.9600	99.2	80	120	06/04/2012

Batch R164375 **SampType:** MSD Units mg/L RPD Limit 15
SampID: 12060019-001EMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Organic Carbon (TOC)	1.0		5.7	5.0	0.9600	95.0	5.920	3.61	06/04/2012

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

Batch 78596 **SampType:** MBLK Units µg/L
SampID: MB-78596

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		< 2.00	2.00	0	0	-100	100	06/01/2012
Zinc	10.0		< 10.0	10.0	0	0	-100	100	06/01/2012

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

Batch 78596 **SampType:** LCS Units µg/L
SampID: LCS-78596

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		**46.3**	50.0	0	92.6	85	115	06/01/2012
Zinc	10.0		**487**	500	0	97.4	85	115	06/01/2012

Batch 78596 **SampType:** MS Units µg/L
SampID: 12060019-001DMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		**44.6**	50.0	0	89.2	75	125	06/05/2012
Zinc	10.0		**499**	500	36.1	92.6	75	125	06/05/2012

Batch 78596 **SampType:** MSD Units µg/L RPD Limit **20**
SampID: 12060019-001DMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cadmium	2.00		**44.2**	50.0	0	88.4	44.6	0.90	06/05/2012
Zinc	10.0		**493**	500	36.1	91.5	499.2	1.17	06/05/2012

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

Batch 78615 **SampType:** MBLK Units µg/L
SampID: MB-78615

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		**< 2.00**	2.00	0	0	-100	100	06/05/2012
Zinc	10.0		**< 10.0**	10.0	0	0	-100	100	06/05/2012

Batch 78615 **SampType:** LCS Units µg/L
SampID: LCS-78615

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		**48.3**	50.0	0	96.6	85	115	06/05/2012
Zinc	10.0		**503**	500	0	100.7	85	115	06/05/2012

Batch 78615 **SampType:** MS Units µg/L
SampID: 12060019-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		**46.6**	50.0	0.3	92.6	75	125	06/05/2012
Zinc	10.0		**523**	500	46	95.5	75	125	06/05/2012

Batch 78615 **SampType:** MSD Units µg/L RPD Limit **20**
SampID: 12060019-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cadmium	2.00		**46.5**	50.0	0.3	92.4	46.6	0.21	06/05/2012
Zinc	10.0		**525**	500	46	95.8	523.4	0.31	06/05/2012

Client: Barr Engineering Company
Client Project: National MTS 25/86-0003

Work Order: 12060019
Report Date: 07-Jun-12

STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

Batch 78595 **SampType:** MBLK Units µg/L
SampID: MB-78595

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		< 2.00	2.00	0	0	-100	100	06/01/2012

Batch 78595 **SampType:** LCS Units µg/L
SampID: LCS-78595

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		14.4	15.0	0	96.1	85	115	06/01/2012

Batch 78595 **SampType:** MS Units µg/L
SampID: 12060019-001DMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	4.00		35.2	15.0	21.6366	90.6	70	130	06/01/2012

Batch 78595 **SampType:** MSD Units µg/L RPD Limit **20**
SampID: 12060019-001DMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	4.00		35.2	15.0	21.6366	90.3	35.2296	0.12	06/01/2012

STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA

Batch 78613 **SampType:** MBLK Units µg/L
SampID: MB-78613

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		< 2.00	2.00	0	0	-100	100	06/04/2012

Batch 78613 **SampType:** LCS Units µg/L
SampID: LCS-78613

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		17.0	15.0	0	113.4	85	115	06/04/2012

Batch 78613 **SampType:** MS Units µg/L
SampID: 12060019-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	4.00		49.7	15.0	33.4279	108.6	70	130	06/04/2012

Batch 78613 **SampType:** MSD Units µg/L RPD Limit **20**
SampID: 12060019-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	4.00		46.5	15.0	33.4279	87.4	49.7243	6.62	06/04/2012

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Barr Engineering Company
Work Order: 12060019
Client Project: National MTS 25/86-0003
Report Date: 07-Jun-12

Carrier: Ricky Schmidt
Received By: JMH

Completed by: Timothy W. Mathis
On: 01-Jun-12

Reviewed by: Michael L. Austin
On: 01-Jun-12

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	0.6	
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐	
Chain of custody present?	Yes ☑	No ☐				
Chain of custody signed when relinquished and received?	Yes ☑	No ☐				
Chain of custody agrees with sample labels?	Yes ☑	No ☐				
Samples in proper container/bottle?	Yes ☑	No ☐				
Sample containers intact?	Yes ☑	No ☐				
Sufficient sample volume for indicated test?	Yes ☑	No ☐				
All samples received within holding time?	Yes ☑	No ☐				
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑			
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐				
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.						
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑			
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑			
Water - pH acceptable upon receipt?	Yes ☑	No ☐				

Any No responses must be detailed below or on the COC.

Print Form

Teklab Chain of Custody

Pg. 1 of 1 Workorder 12060019

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax:(618)344-1005

Barr Engineering Co.

1001 Diamond Ridge, Suite 1100

Jefferson City | MO | 65109

National MTS - 25/86-0003

Are the samples chilled? (•) Yes ( ) No with: (•) Ice ( ) Blue ice Preserved in (•) Lab (X) Field

K.P. 6/1/12

Cooler Temp 0.6 Sampler Chris Schulte

Comments: Invoice to Mark Nations. Results to Allison Olds and Mark Nations, mnations@doerun.com
Matrix is surface water.
Metals = Cd, Pb, Zn
Custody seal intact TRI 6.1.12

Contact Allison Olds eMail aolds@barr.com Phone 573-638-5007 Requested Due Date Standard Billing/PO Per contract with Doe Run

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	pH	T.S.S.	Total Dissolved Solids	Sulfate	Settleable Solids	T.O.C.	Total Metals	Dissolved Metals	Hardness			
12060019 001	Nat-East	5/31/12 14:25	Unpres 5	Aqueous	X	X	X	X	X	X	X	X	X			
			Unpres	Aqueous												
			Unpres	Aqueous												
			Unpres	Aqueous												
			Unpres	Aqueous												
			Unpres	Aqueous												
			Unpres	Aqueous												
			Unpres	Aqueous												

Teklab Inc. Courier Pick Up

Relinquished By *	Date/Time	Received By	Date/Time
[signature] / Brad	5/31/12 16:00	R. Schmidt	6/1/12 08:30
K. Schmidt	6/1/12 11:00	[signature]	6/1/12 1100

* The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of client.